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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/159,442	09/24/1998	ELWOOD G. NORRIS	T7029	5130

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EXAMINER

LEE, PING

ART UNIT PAPER NUMBER

2644

DATE MAILED: 03/26/2003

#80

Please find below and/or attached an Office communication concerning this application or proceeding.

[Handwritten signature]

Office Action Summary

Application No.

09/159,442

Applicant(s)

NORRIS ET AL.

Examiner

Ping Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8,10 and 12-25 is/are rejected.
- 7) ☒ Claim(s) 7,9 and 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 February 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The informal drawings were received on 1/19/2000.
2. Applicant submitted formal drawings 2/28/2000. However, it appears that the submitted formal drawings do not correspond to the informal drawings submitted on 1/19/2000 and also they do not correspond to the specification as originally filed.

Response to Preliminary Amendment

3. Applicant filed a preliminary amendment on 1/11/2000. The amendment to claim 4 does not correspond to the original claim 4. After further evaluation, the amendment to claim 4 has been corrected as amendment to claim 5.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-6, 12-15 and 20-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (US 4,823,908) in view of Sawyers et al (US 5,018,203).

Regarding claims 1-5, 12, 13 and 20-24, Tanaka et al (hereafter Tanaka) disclose a speaker device and a method for generating parametric audio output using a parametric signal generation system (Fig. 2) including an ultrasonic signal source (5), an audio source 4) and a modulating device (col. 2). Although Tanaka mentions that the transducer (8) is a piezoelectric transducer (col. 7, line 3 and col. 10, line 5), Tanaka fails to explicitly show the diaphragm, the support structure, the electrostatic transducer and the electret transducer.

Sawyers et al (hereafter Sawyers) teaches an electrostatic/electret transducer using a supported piezoelectric film as the diaphragm. Tanaka teaches a general parametric speaker using a piezoelectric transducer, wherein one skilled in the art would have expected that any specific type of transducer, such as the one taught in Sawyers, could be used without generating any unexpected result. Thus, it would have been obvious to one of ordinary skill in the art to modify Tanaka's system by incorporating the transducer as taught in Sawyers in order to generate the acoustic sound.

Regarding claims 6 and 25, Tanaka or Sawyers fails to show the planar magnetic diaphragm. It was well known in the art that a transducer having diaphragm made of

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different material or having different structure would produce sound in different quality and frequency. Thus, it would have been obvious to one of ordinary skill in the art to modify Tanaka in view of Sawyers by using a transducer having a planar magnetic diaphragm because it was considered as a matter of design choice to use a particular transducer depending on the application.

Regarding claims 14 and 15, Tanaka shows the concave or convex curvature (Fig. 24).

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 8, 10, and 14-19 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 21 of U.S. Patent No. 6,011,855. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed "arcuate emitter configuration" produced by the piezoelectric film in the patent reads on the claimed "rectified sine form", "a

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sinusoidal form", "convex curvature", "concave curvature", "dipolar propagation mode" or "dimpled transducer diaphragm" of the instant application. Although the patent fails to explicitly claim at least two ultrasonic signals, the single stage energy conversion process, the interaction between the diaphragm and the air, those are the inherent features of a speaker for emitting subsonic, sonic or ultrasonic compression waves.

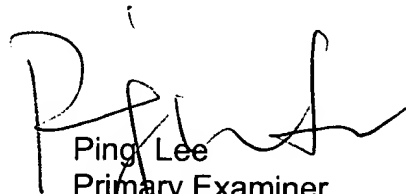
Allowable Subject Matter

9. Claims 7, 9 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 703-305-4865. The examiner can normally be reached on Monday and Tuesday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on 703-305-4386. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4750.


Ping Lee
Primary Examiner
Art Unit 2644

pwl
March 24, 2003